EXHIBIT 3

ATTACHMENT 25

SUMMARY OF PROPOSED PERMIT APPROACH FOR HFPO-DA AND PFOA

The Chemours Company – Washington Works is providing this National Pollutant Discharge Elimination System (NPDES) Permit application for discharges from the Chemours Washington Works Site (the Site). The application addresses discharges of hexafluoropropylene oxide dimer acid (HFPO-DA) and perfluorooctanoic acid (PFOA), which serve as indicator compounds for treatment of fluorinated organics discharged from the Site. The Site has 18 outlets to the Ohio River and its tributaries (Pages Run and Coal Hollow Stream), collectively known as receiving waters, and internal outlets from treatment systems for process wastewater. This document provides an overview of our proposed approach for technology-based effluent limits (TBELs) and water quality-based effluent limits (WQBELs) for the Site. All acronyms and abbreviations that are used in the paper and its attachments are defined in **Attachment 25a**, *Acronyms and Abbreviations*.

For the permit application, Chemours developed a mass loading model for the Site. The paper, **Attachment 25b**, *Mass Loading Approach and Summary*, documents the water streams that contribute HFPO-DA and PFOA to each outlet. The paper also provides the estimated reduction in HFPO-DA and PFOA annual average mass loading to the receiving water that will be achieved with the proposed treatment strategy. The resulting site-wide mass loadings of HFPO-DA and PFOA are proposed as the WQBELs, which are proposed to be implemented in a manner consistent with the Final Per- and Polyfluoroalkyl Substances (PFAS) National Primary Drinking Water Rule (NPDWR), i.e., as a 12-month rolling average.

1. Introduction

As shown in **Attachment 4** of the NPDES permit application, there are 13 outlets to the Ohio River, four outlets to Pages Run or its unnamed tributary, and one outlet to the Coal Hollow Stream. Some of the outlets to the Ohio River include a mix of process wastewater; stormwater runoff in the manufacturing area; groundwater; non-contact cooling water (NCCW); and other waste streams such as condensate, boiler blowdown, leachate from the Local Landfill, and backwash from cooling water. Other outlets to the receiving waters only discharge stormwater runoff from outside of the manufacturing areas. Chemours is proposing 15 internally monitored outlets for process wastewater, of which six have not yet been constructed.

On April 26, 2023, Chemours entered into an Administrative Order on Consent (AOC) with the U.S. Environmental Protection Agency (EPA) (EPA Docket No. CWA-03-2023-0025DN). The AOC required that Chemours submit and implement an *Alternatives Analysis and Implementation Plan* (AA&IP) to treat HFPO-DA and PFOA to come into compliance with current permit limits. The AA&IP was submitted on August 24, 2023. This permit application has been developed to be consistent with the proposed AOC treatment plan which is under review by EPA.

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2. Proposed Technology Based Effluent Limits (TBELs)

This section summarizes our proposed approach for the establishment of TBELs for HFPO-DA and PFOA at the Site for the treated process wastewater streams.

Process Wastewater TBELs for Internal Outlets

For internal waste streams, granular activated carbon (GAC) treatment will be used to achieve effluent levels consistent with the best achievable control technology (BAT) as discussed in **Attachment 25c**, *Treatment of Process Wastewaters: Factors for Technology-Based Effluent Limits* (Geosyntec, 2024). **Table 1** and **Table 2** provide the TBELS for the five onsite treatment systems for HFPO-DA and PFOA, respectively.

These TBELs represent the effluent levels that Chemours intends to achieve with proposed technologies and operations. Treatability studies and pilot testing are needed to determine what additional capital, operations and maintenance requirements are needed for each treatment system to achieve the effluent targets. Accordingly, a compliance schedule is required to achieve these effluent limits as documented in **Attachment 25c,** *Treatment of Process Wastewaters: Factors for Technology-Based Effluent Limits*.

Table 1. Technology-Based Effluent Limits for HFPO-DA

Process Wastewater Treatment Systems	Outlet	Loading Limitation		Concentration Limitation	
		Average Monthly Limit (lbs/d)	Maximum Daily Limit (lbs/d)	Average Monthly Limit (µg/L)	Maximum Daily Limit (µg/L)
PFA Line 2 and Line 3 Finishing	115	0.000284	0.000655	0.327	0.756
CWTS-A: B184 Sump, Granular Sump, Monomer Neutralization Tank, B162 Targeted Process Water	705	0.000036	0.000073	0.010	0.0201
CWTS-B: W9 Line 1, W9 Permeate Polish	805	0.000021	0.000042	0.010	0.0201
B22: B22 Sump	905	0.00070	0.00140	2.316	4.656
Dryer Belt Wash Water (DBWW)	302	0.000007	0.000013	0.010	0.019

NOTE: lbs/d = pounds per day; µg/L = micrograms per liter

Flows used to calculate the loading limitations are 0.104 million gallons per day (MGD) for PFA Line 2; 0.435 MGD for CWTS-A; 0.249 MGD for CWTS-B; 0.036 MGD for B22; and 0.081 MGD for DBWW.

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Table 2. Technology-Based Effluent Limits for PFOA

Process Wastewater Treatment Systems	Outlet	Loading Limitation		Concentration Limitation	
		Average Monthly Limit (lbs/d)	Maximum Daily Limit (lbs/d)	Average Monthly Limit (ug/L)	Maximum Daily Limit (ug/L)
PFA Line 2 and Line 3 Finishing	115	0.00000385	0.000004	0.004	0.005
CWTS-A: B184 Sump, Granular Sump, Monomer Neutralization Tank, B162 Targeted Process Water	705	0.000015	0.000029	0.004	0.00804
CWTS-B: W9 Line 1, W9 Permeate Polish	805	0.000008	0.000017	0.004	0.00804
B22: B22 Sump	905	0.000003	0.000006	0.0095	0.0191
Dryer Belt Wash Water (DBWW)	302	0.0000025	0.0000034	0.004	0.005

NOTE: lbs/d = pounds per day; µg/L = micrograms per liter
Flows used to calculate the loading limitations are 0.104 million gallons per day (MGD) for PFA Line 2; 0.435 MGD for CWTS-A; 0.249 MGD for CWTS-B; 0.036 MGD for B22; and 0.081 MGD for DBWW.

TBELs for HFPO-DA and PFOA for the PFA Line 2 treatment system at Outlet 108 were established with NPDES permit WV0117986. In this application it is proposed that these same limits apply to Outlet 115, which is the same PFA Line 2 treatment system with PFA Line 3 flows added. Due to the available system treatment data, the effluent limits for DBWW at Outlet 302 were calculated in the same way as was done for PFA Line 2 for Outlet 108.

For B22 (Outlet 905), the limits were derived based on an assumed removal efficiency of 99% with a period for optimization of the GAC system. This is required due to the high concentration of total organic compounds in the influent water.

For two of the other treatment systems, CWTS-A (Outlet 705) and CWTS-B (Outlet 805), Chemours proposes using the maximum contaminant levels (MCLs) in the Final PFAS NPDWR as average monthly limits (AMLs). Selecting the MCL as the technology-based AML serves as a conservative basis to achieve an effluent concentration that is aligned with the NPDWR.

Chemours maintains that the MCLs are not appropriate to establish NPDES permit limits. First, the MCLs in the NPDWR represent long-term (70 years) exposure and would be inapplicable for real-time, end-of-pipe limits. Second, the rules have been challenged and are in early stages of judicial review.[1] However, in the absence of numeric surface water quality criteria, Chemours is proposing that the MCLs be used as targets to protect the public water supply use of the Ohio

[1] U.S. Court of Appeals for the District of Columbia Circuit, Docket No. 24-1188, American Water Works Association, et al v. EPA, et al.

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River. This approach is further discussed below and in **Attachment 25d**, *Compliance Approach for HFPO-DA and PFOA*.

Despite the fact that the MCLs are based on long-term exposure assumptions, Chemours is proposing that the MCLs be used to establish technology-based AMLs for the CWTS-A and CWTS-B treatment systems. The proposed technology-based AMLs are 10 nanograms per liter (ng/L) for HFPO-DA and four (4) ng/L for PFOA. The technology-based maximum daily limits (MDLs) of 20.1 ng/L for HFPO-DA and 8.04 ng/L for PFOA were calculated for these treatment systems using the default coefficient of variation of 0.6, four samples per month, and an MDL/AML ratio of 2.01, in accordance with procedures identified in EPA's *Technical Support Document for Water Quality Based Toxics Control*, Table 5-3 (EPA, 1991).

Stormwater Benchmarks

For stormwater discharges which are described in **Attachment 25e**, *Description of Stormwater Outfalls*, Chemours proposes benchmarks consistent with standard stormwater discharge permitting practices employed by the West Virginia Department of Environmental Protection (DEP) including:

- Monitoring of stormwater discharges
- Continued implementation of a Stormwater Pollution Prevention Plan (SWPPP) including:
    - Continued implementation of procedures to identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the facility; and
    - Continued implementation of best management practices (BMPs) to eliminate or reduce pollutants in stormwater discharges from the facility. This will be conducted in accordance with the proposed Pollutant Minimization Program (PMP) discussed below.

West Virginia Code §22-11-6(c) states that benchmarks for stormwater discharges are to be based on the aquatic life criteria, federal benchmarks, or ambient aquatic life advisory concentrations. EPA recently established recommended aquatic life criteria for PFOA. The recommended acute criterion is 3.1 milligrams per liter (mg/L) and the recommended chronic criterion is 0.1 mg/L. These values are appropriate as stormwater benchmarks for the outlets that only discharge stormwater to the receiving waters. Chemours proposes that Outlet 006, which previously conveyed water other than stormwater but is now a stormwater-only outlet as described in **Attachment 25e**, *Description of Stormwater Outfalls*, only contain monitoring and reporting requirements for Outlet 006 that are consistent with stormwater-only outlets.

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3. Proposed Water Quality-Based Effluent Limits (WQBELs)

This section summarizes our proposed approach to the development of WQBELs including:

- Applicable water quality criteria and targets
- Point of compliance in the river
- Calculation of ambient Ohio River concentrations
- WQBELs and compliance metrics

Applicable Water Quality Criteria and Targets

West Virginia does not currently have numeric surface water quality standards for HFPO-DA and PFOA. However, West Virginia's narrative criteria at 47CSR2 §3.2.e. prohibit "[m]aterials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life." In the absence of numeric surface water quality criteria, Chemours proposes applying the NPDWR MCLs as targets for HFPO-DA and PFOA to protect the Ohio River's designated use as a public water supply. The MCL values, HFPO-DA of 10 ng/L and PFOA of 4 ng/L, are reflective of long-term (70 years) human exposure to drinking water and therefore are conservative targets that are protective of public health and the public water supply in the Ohio River downstream of the Site.

A detailed description of these targets is contained in **Attachment 25d**, *Compliance Approach for HFPO-DA and PFOA*.

Point of Compliance in the River

Chemours proposes the use of the MCLs as targets to achieve or strive for at the edge of a site-specific mixing zone (SSMZ). The SSMZ would extend to 0.5 miles upstream of the Lubeck Public Service District's public water supply wellfield, which sources water from groundwater. This SSMZ, therefore, serves as a conservative approach to protecting the public water supply use in the Ohio River. The technical and regulatory basis for a SSMZ, as provided in DEP regulations, is presented in **Attachment 25f**, *Water Quality-Based Effluent Limits and Dilution Factors*.

Calculation of Ohio River Concentrations at the SSMZ

The calculation of the maximum HFPO-DA and PFOA concentrations in the Ohio River resulting from Site discharges is based on the following key components:

- Upstream concentrations
- Dilution factors for discharges at the SSMZ

The Ohio River upstream concentration of HFPO-DA was calculated to be 0.9 ng/L and the upstream PFOA concentration was calculated to be 2.9 ng/L. **Attachment 25g**, *Upstream Ohio River PFAS Data*, presents additional details on the Ohio River upstream concentrations.

Dilution factors for each process wastewater outfall at the SSMZ were calculated using the CORMIX model. These factors ranged from a low of 67:1 (Outlet 005 at 50 MGD) to a maximum of ~25,000:1 (Outlet 001 at 0.1 MGD) and are presented in **Attachment 25f**, *Water Quality-Based*

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Effluent Limits and Dilution Factors. Modeling was conducted at critical flow and temperature conditions in the Ohio River, specifically a harmonic mean flow of 24,500 cubic feet per second during August temperature conditions to develop the dilution factors. Site discharges were represented at the 95th percentile of monthly average flows. Additional details on the CORMIX modeling are provided in **Attachment 25h**, *Mixing Zone Modeling to Develop Dilution Factors*.

Chemours proposes that the cumulative impact of discharges from Washington Works be considered in assessing WQBELs that achieve or make progress towards the MCL targets at the SSMZ. HFPO-DA and PFOA concentrations at the SSMZ were conservatively calculated by assuming the centerline of the plume for each outfall, representing the maximum concentration, overlies with the centerline of the plume for every other outfall. The regulation supporting permitting of overlapping mixing zones to the edge of the mixing zone is documented in **Attachment 25f**, *Water Quality-Based Effluent Limits and Dilution Factors*.

For the proposed AOC treatment plan, the calculations result in a predicted maximum HFPO-DA concentration of 6.3 ng/L at the SSMZ, protective of the MCL target of 10 ng/L. The HFPO-DA wasteload allocation was calculated using the upstream Ohio River concentration of 0.9 ng/L, the centerline of plume dilution factors for each discharge from the CORMIX model, and the HFPO-DA loads from each river outlet under the proposed AOC treatment plan. The discharge loads represent the average concentration and a representative maximum flow (the 95th percentile monthly average discharge flow) at each outlet to the receiving water. The total combined site-wide load of HFPO-DA is 74 pounds per year, as documented in **Attachment 25b**, *Mass Loading Approach and Summary*.

In the case of PFOA, a concentration of 5.4 ng/L was calculated at the SSMZ under the proposed AOC treatment plan using an upstream concentration of 2.9 ng/L. A site-wide mass load of 30 pounds per year is proposed in this permit application, making progress towards, but not fully achieving, the MCL target of 4 ng/L at the edge of the SSMZ. As discussed further below, Chemours proposes continuing source identification efforts and elimination or reduction measures by formalizing a PMP for PFOA. Currently, there is insufficient information to identify and prioritize appropriate actions. Therefore, Chemours proposes that the permit include a special condition for the development and implementation of the PMP with the goal of achieving 4 ng/L PFOA at the SSMZ.

While the mixing zone modeling[2] predicts the concentrations of HFPO-DA and PFOA at the SSMZ, Chemours also assessed the concentrations resulting from complete mixing with the Ohio River harmonic mean flow to understand the resulting baseline water quality downstream of the facility. Under complete mixing, HFPO-DA concentrations are predicted to be 2.4 ng/L and PFOA concentrations are predicted to be 3.5 ng/L, both below the MCLs and a small increase over the

[2] The mixing zone modeling is documented in **Attachment 25h**, *Mixing Zone Modeling to Develop Dilution Factors*.

upstream concentrations of 0.9 ng/L and 2.9 ng/L, respectively. An analysis of the Ohio River concentrations downstream of the Site presented in **Attachment 25i**, *Downstream Ohio River HFPO-DA and PFOA Concentrations*, shows that the average concentrations in the river at the SSMZ are 1.9 ng/L for HFPO-DA and 3.6 ng/L for PFOA using data from February 2022 to February 2023.

WQBELs and Compliance Metrics

Compliance with MCLs in finished drinking water supplies, as defined in the NPDWR, is measured using a 12-month rolling average. This compliance approach accounts for the long-term (70 year) exposure scenario used to develop the MCLs. Chemours, therefore, proposes to measure compliance with WQBELs set at site-wide mass loads of 74 pounds per year (lbs/yr) for HFPO-DA and 30 lbs/yr for PFOA using a 12-month rolling average. These site-wide mass loading limits would serve as the WQBELs in the permit. Site-wide limits are allowed by EPA regulations as described in **Attachment 25j**, *Integrated (Bubble) Industrial Permit*. We propose that the site-wide mass load WQBELs be implemented in the permit as follows:

- Site-wide mass load WQBELs be established at 74 lbs/yr for HFPO-DA and 30 lbs/yr for PFOA using a 12-month rolling average.
- Continued monthly monitoring of Ohio River concentrations of HFPO-DA and PFOA upstream and at the edge of the SSMZ.
- Continued monitoring and reporting of monthly flow and concentration for river outlets with WQBELs.
- Modeling and reporting of monthly mass discharge calculations for each stormwater outlet.
- A monthly operating report that provides the calculation and reporting of the 12-month rolling average site-wide mass loads.
- The following language be included in the permit:
    - *Where a site-wide mass load WQBEL is included in the permit, if the measured site-wide mass load is less than or equal to the WQBEL, excursions of effluent limitations for individual outfalls are not considered permit violations.*

We propose that the calculation of the 12-month rolling average for WQBEL compliance determinations substitute a value of zero for sample results less than the Practical Quantitation Level for HFPO-DA and PFOA. This is consistent with the EPA NPDWR for PFAS in 40 CFR 141.903(f)(1)(iv) as well as standard language DEP includes in permits. Additional information is contained in **Attachment 25d**, *Compliance Approach for HFPO-DA and PFOA*.

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4. Develop and Implement a Pollutant Minimization Program

As presented above, the proposed treatment plan with an upstream PFOA concentration of 2.9 ng/L is not expected, on average, to achieve the MCL target of 4 ng/L at the SSMZ. Therefore, Chemours is proposing to submit a PMP within six months of the issuance of the site-wide permit. The PMP will include activities that have been completed or that are ongoing including: continued implementation of the Stormwater Pollution Prevention Plan; continued assessment of housekeeping and key performance indicators; continued BMPs for stormwater in the process area; continued application of a stormwater model for the Site to estimate stormwater outlet flows; upstream and downstream monitoring in the Ohio River; track down studies to isolate sources of PFOA for specific outlets when appropriate; East Pad improvements; treatment of stormwater for Outlet 006 with a flow-through GAC cell; continued modeling of impacts of discharges on Ohio River water quality; and non-targeted PFAS analyses of all the outlets. The PMP will include key milestones for implementing proposed activities.

5. Proposed New Facility Operations

Three (3) new processes are being planned to take place at the facility in the next permit cycle. These new processes are included in **Table 3**.

Table 3. Planned New Processes

Process Name	Discharge Outlet	Anticipated Average Monthly Flow (MGD)		Maximum Daily Flow (MGD)	
		NCCW	Process Water	NCCW	Process Water
PFA Line 3 Finishing[1]	005	0.307	0.104	0.430	0.146
PPVE	005	0.648	0.0072	0.864	0.0072
Co-coagulation (xEV)[2]	005	--	--	--	--
Total NCCW & Process WW Flows		**0.955**	**0.1112**	**1.294**	**0.1532**
Total Flows		**1.0662**		**1.4472**	

NOTE: MGD = million gallons per day; NCCW = non-contact cooling water

[1]Process flows from PFA Line 2 and Line 3 are combined to total 0.104 and 0.146 maximum, so representing PFA Line 3 as the total flow is conservative.

[2]The proposed xEV line will result in no new or expanded discharge of pollutants.

Attachment 25k, *Antidegradation*, presents an antidegradation analysis of the addition of these processes. This analysis demonstrated that the discharges from the new processes will not increase the baseline water quality (BWQ) level by more than 10% of the remaining assimilative capacity, satisfying the antidegradation Tier 2 requirements. The analysis also demonstrated that the calculated Tier 1 WQBELs are more stringent than the Tier 2 limits for HFPO-DA and PFOA. Therefore, the anticipated discharges from the new processes will not cause significant degradation and both Tier 2 and Tier 1 protection are afforded for the uses specified in 47 Code of State Rules Series 2, Section 6. Additionally, Chemours commits to maintain the proposed site-wide mass limits with the addition of these new processes.

ATTACHMENT 25a

ACRONYMS AND ABBREVIATIONS

ACRONYM / ABBREVIATION	DEFINITION
AA&IP	Alternatives Analysis and Implementation Plan
AML	Average monthly limit
AOC	Administrative Order on Consent
B22	Building 22
BAT	Best achievable control technology
BMP	Best management practices
BPJ	Best professional judgment
BWQ	Baseline water quality
cfs	cubic feet per second
CWTS	Contact Wastewater Treatment System
DAF	Dissolved air floatation
DBWW	Dryer belt wash water
DEP	Department of Environmental Protection
DMF	Dual media filtration
DMR	Discharge monitoring report
DOC	Dissolved organic carbon
EBCT	Empty bed contact time
EFDC	Environmental Fluid Dynamics Code
ELG	Effluent limitations guideline
EPA	Environmental Protection Agency
FP KO Pot	Fine Powder Knock-out Pot
GAC	Granular activated carbon
gpm	gallons per minute
GW	Groundwater
HFPO-DA	Hexafluoropropylene oxide dimer acid
IX	Ion exchange
lbs/d	pounds per day
Lbs/yr	pounds per year
MBR	Membrane bioreactor
MCL	Maximum contaminant level
MDL	Maximum daily limit
µg/L	micrograms per liter
MGD	million gallons per day
NCCW	Non-contact cooling water
ng/L	nanograms per liter
NPDES	National Pollutant Discharge Elimination System
NPDWR	National Primary Drinking Water Rule
OCPSF	Organic Chemicals, Plastics, and Synthetic Fibers
PFA	Perfluoroalkoxy Alkane
PFAS	Per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic acid

ATTACHMENT 25a

ACRONYMS AND ABBREVIATIONS

ACRONYM / ABBREVIATION	DEFINITION
PFOS	Perfluorooctanesulfonic acid
PMP	Pollutant Minimization Program
POR	Period of record
PQL	Practical quantification level
RIX	Regenerable ion exchange
RO	Reverse osmosis
SSMZ	Site-specific mixing zone
SWPPP	Stormwater Pollution Prevention Plan
TBEL	Technology-based effluent limit
TOC	Total organic carbon
TSS	Total suspended solids
WQBEL	Water quality-based effluent limit